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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,789	11/26/2003	Arno Jan Blecker	081468-0306887	5093

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EXAMINER
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CHACKO DAVIS, DABORAH

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/721,789

Applicant(s)

BLEEKER, ARNO JAN

Examiner

Daborah Chacko-Davis

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4, 6, 11-13, 15, 18-19, 22-25, 27-28, are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 5,998,069 (Cutter et al).

Cutter, in col 6, lines 9-67, in col 7, lines 1-11, and lines 25-50, in col 8, lines 1-32, in col 10, lines 15-64, discloses a photolithography system that uses an electronically controlled mask to manufacture integrated circuits, comprising an illumination source that projects a beam onto the photoresist coated substrate via a programmable patterning structure (electronically controlled mask), wherein the mask comprises a first layer of electro-optical material (solid-state), a second layer of electro-optical material, providing a plurality of electrodes to apply a voltage to the electro-optical layer such that the light reflected or absorbed is polarized, each pixel (region of the mask) is configured to attenuate and cause a phase shift the radiation incident on the region (claims 1-2, 4, 11-12, 15, 18-19, 21-25, 27-28). Cutter, in col 7, lines 1-11, and in col 8, lines 8-25, discloses that the electronically controlled mask includes a reflective layer (claims 6, and 13).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 5, 9, 14, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 5,998,069 (Cutter et al) in view of U. S. Patent Application Publication No. 2003/0076423 (Dolgoff).

Cutter is discussed in paragraph no. 2.

The difference between the claims and Cutter is that Cutter does not disclose that the electro-optical material is formed from the materials recited in claims 3, 5, 9, and 14.

Dolgoff, in [0010], discloses that the electro-optical materials (LCD) include potassium dihydrogen phosphate.

Therefore, it would be obvious to replace the electro-optical material of electronically controllable mask with the material suggested by Dolgoff because Dolgoff, in [0010], discloses that using potassium dihydrogen phosphate crystals in the LCD enables effects such as rotation of the polarization plane, altering the refractive index upon electric field applications.

5. Claims 7-8, 16, 20, and 26, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 5,998,069 (Cutter et al) in view of U. S. Patent Application Publication No. 2002/0112824 (Ballard et al).

Cutter is discussed in paragraph no. 2.

Cutter, in col 7, lines 1-11, and in col 8, lines 8-25, discloses that the electronically controlled mask includes a reflective layer, that reflects the radiation incident on the layer (claim 8).

The difference between the claims and Cutter is that Cutter does not disclose an actuator configured to adjust the position of the electro-optical material in a direction parallel to the beam of the radiation incident on the pixel element (claims 7, 16, 20, 26).

Ballard, in [0007], discloses an actuator means that is coupled to support of the patterning device (mask) in order to enable the adjustment of the patterning device in the direction of the optical axis (parallel to the incident beam of radiation).

Therefore, it would be obvious to a skilled artisan to modify Cutter by employing the actuator means suggested by Ballard because Ballard, in [0008], discloses that the actuator means enables automated time intervals without manual user input, and can be retracted during operation.

6. Claims 10, and 17, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 5,998,069 (Cutter et al) in view of U. S. Patent No. 5,682,214 (Amako et al)

Cutter is discussed in paragraph no. 2.

The difference between the claims and Cutter is that Cutter does not disclose using a polarizing filter to attenuate the radiation outgoing from the pixel elements (claims 10, and 17).

Amako, in col 4, lines 54-67, discloses using polarizing plates in close proximity to the LCD (electronically controlled mask) in order to attenuate the radiation incident on the LCD.

Therefore, it would be obvious to a skilled artisan to modify Cutter by employing the polarizing filters suggested by Amako because Cutter, in col 7, lines 1-13, discloses that the light incident on the mask is polarized, and Amako, in col 4, lines 57-60, discloses that the polarizing plates assures the obtaining of the smallest possible phase shifts.

### ***Response to Arguments***

7. Applicant's arguments filed December 19, 2005, have been fully considered but they are not persuasive. The 102 and 103 rejections made in the previous office action (paper no. 1003) are maintained.

A) Applicant argues that Cutter et al does not disclose a solid-state electro-optical material.

Cutter, in col 8, lines 14-26, discloses a mask that is in solid-state. Cutter discloses a quartz substrate coated with shielding material in its solid state as the mask.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daborah Chacko-Davis whose telephone number is (571) 272-1380. The examiner can normally be reached on M-F 9:30 - 6:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dcd



March 20, 2006.



**JOHN A. MCPHERSON  
PRIMARY EXAMINER**